

Appln. Ser. No. 09/695,715
Resp. dated Apr. 3, 2006
In Reply to Office Action of Nov. 3, 2005

REMARKS

Claims 164-221 are pending.

I. PATENTABLE SUBJECT MATTER

Applicants gratefully acknowledge the indication by the Examiner that claims 170, 178-181, 188, 196, 197, 205 and 217 recite patentable subject matter. In view of the remarks herein, it is believed that claims 170, 178-181, 188, 196, 197, 205 and 217 are in condition for allowance.

II. ELDER IN VIEW OF WU

Independent claim 164 recites a transmitter. Independent claim 182 recites a transmitter. Independent claim 199 recites a CMOS transmitter system. Independent claim 211 recites a transmitter system. On the other hand, Elder describes an AM *receiver*.

Applicants cannot comprehend why the Examiner chose to present an obviousness rejection based, in part, on Elder in view of Wu.

Applicants filed an Appeal Brief on August 18, 2005 ("the Appeal Brief"), addressing the reasons why Elder and Wu could not be combined. In the Appeal Brief and in each and every response by Applicants, Applicants have pointed out, among other things, that Elder relates to an AM *receiver* and thus was inappropriate as the basis of an obviousness rejection.

Since the Examiner chose to re-open prosecution by mailing yet another Office Action instead of filing an Examiner's Answer with the Board in answer to the Appeal Brief, it can only be presumed that the Examiner found Applicants' arguments and rebuttal evidence persuasive. Accordingly, Applicants cannot understand why the Examiner presented his case based, in part, on Elder in view of Wu.

Applicants respectfully direct the attention of Examiner to the following:

- (1) On page 4 of the Appeal Brief, Applicants pointed out that Elder related to a fully integrated all-CMOS receiver.

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(2) On pages 4 and 5 of the Appeal Brief, Applicants pointed out the fallacy in pointing to isolated incidents in Elder in which the term "transmitter" was used.

(3) On pages 5-7 of the Appeal Brief, Applicants pointed out that the allegedly inventive concepts of the receiver of Elder placed the complexities in the receiver so that it could be used with simpler, cheaper and less accurate transmitters (e.g., SAW-base and LC-based transmitters).

(4) On pages 7 and 8 of the Appeal Brief, Applicants pointed out that Elder teaches away from the "*claimed invention*" which is a "*significant factor* to be considered in determining obviousness". See, e.g., M.P.E.P. § 2145(X)(D)(1).

(5) On page 8 of the Appeal Brief, Applicants pointed out that Elder and Wu teach away from each other and thus teach away from their combination as asserted by the Examiner in his case for obviousness. See, e.g., M.P.E.P. § 2145(X)(D)(2).

(6) On page 8 of the Appeal Brief, Applicants pointed out that, as proposed by the Examiner, the proposed modification of Elder by the teachings of Wu would necessarily render Elder *unsatisfactory for its intended purpose* as a receiver. Thus, Elder cannot be modified in view of Wu because of M.P.E.P. § 2143.01. See, e.g., M.P.E.P. § 2143.01 ("the proposed modification cannot render the prior art unsatisfactory for its intended purpose").

(7) On pages 9 and 10 of the Appeal Brief, Applicants pointed out that, as proposed by the Examiner, the proposed modification an AM receiver of Elder by the teachings of an FM transmitter of Wu would necessarily *change the principle of operation* of the AM receiver of Elder. See, e.g., M.P.E.P. § 2143.01 ("the proposed modification cannot change the principle of operation of a reference").

As a courtesy, Applicants have reproduced the relevant sections of the Appeal Brief in the attached APPENDIX.

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In view of the foregoing, no obviousness rejection can be maintained based on the combination of Elder and Wu.

It is therefore respectfully requested that the rejection be withdrawn with respect to claims 164-169, 171-177, 182-187, 189-195, 198-204, 206-216 and 218-221.

III. THE ANG PATENT

Independent claim 164 recites a transmitter. Independent claim 182 recites a transmitter. Independent claim 199 recites a CMOS transmitter system. Independent claim 211 recites a transmitter system.

On the other hand, the Ang patent ("Ang") relates to a radio communication *receiver*. The title of Ang is "Automatic Frequency Control in a Radio Communication *Receiver*". See Title of Ang.

FIG. 4 of Ang, which is relied upon by the Examiner, shows an electrical block diagram of a *receiver* 203, portions of a control circuit 206 and a controllable local oscillator 215. See, e.g., Ang at col. 3, lines 54-58; and col. 6, lines 17-22.

At this time again, Applicants point out that claims 164 and 182 recite a transmitter. Claim 199 recites a CMOS transmitter system. Claim 211 recites a transmitter system.

Applicants respectfully submit that the Examiner should not look for elements of a transmitter or a transmitter system by citing patent documents about *receivers*.

No prima facie case of obviousness has been presented and all of the problems of combining Elder and Wu, as presented in the Appcal Brief, are compounded by citing yet another patent relating to a receiver (i.e., the Ang receiver).

IV. REMOVE ELDER, WU AND ANG FROM FUTHER CONSIDERATION

Applicants respectfully request that the Examiner not issue further obviousness rejections based on either Elder, Wu or Ang, individually or combined. At this time again, Applicants point out that claims 164 and 182 recite a transmitter. Claim 199 recites a CMOS transmitter system. Claim 211 recites a transmitter system. It is respectfully requested that the Examiner not rely upon documents related to *receivers* in developing further rejections in subsequent

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Office Actions. Applicants would gratefully appreciate the Examiner's assistance in these matters.


V. **CONCLUSION**

In view of at least the foregoing, it is respectfully submitted that the pending claims 164-221 are in condition for allowance. Should anything remain in order to place the present application in condition for allowance, the Examiner is kindly invited to contact the undersigned at the below-listed telephone number.

Please charge any required fees not paid herewith or credit any overpayment to the Deposit Account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

Dated: April 3, 2006

Respectfully submitted,


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APPENDIX

The following is an excerpt from the Appeal Brief as discussed in the REMARKS above:

With respect to claims 164-221, Appellants respectfully submit that Elder in view of Wu were improperly combined.

Appellants cannot stress enough that Elder relates to a fully integrated all-CMOS receiver and that independent claims 164, 182, 199 and 211 recite a transmitter, a transmitter system and/or a transmission system. The title of Elder is "Fully Integrated All-CMOS AM Receiver". See title of Elder. The Field of the Invention section states that "[t]his invention relates to radio wave receivers and, in particular, to a receiver formed as a single integrated circuit." See col. 1, lines 13-14 of Elder. The Background section describes "radio receivers, such as amplitude modulation (AM) type receivers". See col. 1, lines 17-18 of Elder. All the figures in Elder relate to the AM receiver. "FIG. 1 is a block diagram of a single chip receiver in accordance with one embodiment of the invention. FIG. 2 provides an additional detail of the LO Sweep Generator" which is merely a detailed figure of a component in FIG. 1 which illustrates a single chip receiver. See col. 2, lines 3-5 of Elder. "FIG.3 illustrates an optimum LO sweep range" which merely adds further detail to FIG. 2 which all relates to the AM receiver. See col. 2, line 7 of Elder. "FIGS. 4-76 illustrate actual circuitry for implementing a preferred embodiment of the single chip receiver." See col. 2, lines 8-10 of Elder.

The above-identified evidence supports Appellants' view that the disclosure relates to a fully integrated all-CMOS AM receiver and not a transmitter as alleged by the Examiner. The Examiner has pointed to isolated incidents in which the term "transmitter" has been used and erroneously assumed that particular figures, particular components in particular figures or descriptions thus relate to a "transmitter" because of the mere proximity of the various descriptions to the term "transmitter". However, the Examiner has taken excerpts from Elder and taken the excerpts out of context in make such broad sweeping interpretations and characterizations.

The point of the invention of Elder is that the alleged complexities (e.g., additional functions) and inventive concepts provided in the fully integrated all-CMOS AM receiver allow

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for the allegedly inventive and more complex fully integrated all-CMOS AM receiver to be used with simpler, cheaper and less accurate transmitters. However, Elder does not describe a transmitter in any figure and merely mentions a transmitter in passing as a foil to the superior qualities of the fully integrated all-CMOS AM receiver. In other words, Elder describes a fully integrated all-CMOS AM receiver that can be used with a simpler, less accurate and cheaper transmitter. However, such a transmitter is not described in detail and merely mentioned in passing since Elder relates to a receiver and not a transmitter. Appellants believe that support for Appellants' interpretation can be found in the very text that is cited by the Examiner, for example, in the Summary section of Elder:

The receiver uses a novel architecture that allows the receiver to demodulate signals over a wide RF band, which eliminates the need for manual tuning. This is referred to as a swept LO mode. This also significantly relaxes the frequency accuracy and stability requirements of the Transmitter, allowing the receiver to be compatible with both SAW-based and LC-based transmitters. The receiver sensitivity and selectivity are sufficient to provide low bit error rates for decode ranges over 100 meters, equaling the performance of other more expensive solutions.

Sec col. 1, lines 37-47 of Elder. Thus, the alleged innovations of Elder allow it to be used even with the cheaper and less accurate SAW-based and LC-based transmitters. In view of this interpretation, it is clear that the Examiner is incorrect in his interpretation that the figures illustrate components of a transmitter, a transmitter system and/or a transmission system as set forth in independent claims 164, 182, 199 and 211. Clearly, Elder mentions, only in passing, "SAW-based and LC-based" transmitters, the description of such transmitters being so limited.

In support of the Examiner's argument that Elder teaches the recited elements of a transmitter, a transmission system and/or a transmitter system as set forth in independent claims 164, 182, 199 and 211, the Examiner cites col. 1, lines 39-44, col. 2, lines 52-61 and col. 3, lines 31-35 of Elder. Col. 1, lines 39-44 of Elder was already discussed above. Appellants reproduce the relevant lines of the other citations below:

In the context of this application, fully integrated means that all of these functions in their entirety have been simultaneously incorporated onto a single semiconductor die (integrated circuit or IC). Additional aspects of the receiver (to be detailed subsequently) reduce overall radio system complexity, cost, and transmitter performance requirements. Note

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that DC control lines for the receiver (described subsequently) may be either pinned-out for maximum end-user control, or may be fixed on the die via a metal mask, the latter allowing the most economical packaging.

Col. 2, lines 52-61 of Elder.

In Swept mode, the LO frequency is varied across a range of frequencies at a rate sufficiently higher than the data rate to allow for peak (envelope) detection. This mitigates the requirement for an accurately controlled and/or age and temperature stabilized transmitter carrier frequency.

Col. 3, lines 31-35 of Elder.

Appellants respectfully submit that col. 2, lines 52-61 of Elder merely support Appellants' interpretation that allegedly inventive aspects provided in the fully integrated all-CMOS AM receiver "reduce[s] ... transmitter performance requirements". In other words, because of the additional circuitry shown in FIGS. 1-76, the fully integrated all-CMOS AM receiver can be used with simpler, cheaper, less accurate transmitters that have reduced transmitter performance requirements. Elder does not, however, describe the details of these transmitters since that is not the impetus of the invention or the descriptions in Elder.

Appellants respectfully submit that col. 3, lines 31-35 of Elder also merely support Appellants' interpretation that allegedly inventive aspects provided in the fully integrated all-CMOS AM receiver such as the swept LO mode merely reduces the requirements of any transmitter in communication with the fully integrated all-CMOS AM receiver. In other words, because of the additional circuitry shown in FIGS. 1-76, the fully integrated all-CMOS AM receiver can be used with simpler, cheaper, less accurate transmitters that do not have "accurately controlled and/or age and temperature stabilized transmitter carrier frequency". Elder does not, however, describe the details of these transmitters since that is not the impetus of the invention or the descriptions in Elder.

Appellants respectfully submit that the Examiner was incorrect in alleging that Elder taught or suggested the recited elements of a transmitter, a transmitter system and/or a transmission system as set forth in independent claims 164, 182, 199 and 211. Appellants respectfully submit that, despite the Examiner's allegations to the contrary, Elder relates to a

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receiver and not, as alleged by the Examiner despite all the evidence provided by Appellants during the prosecution of the present application, to a transmitter. It was improper for the Examiner to recite receiver components of the fully integrated all-CMOS AM receiver to meet the elements of a transmitter, a transmitter system and/or a transmission system as set forth in independent claims 164, 182, 199 and 211.

Elder teaches a fully integrated all-CMOS AM receiver and not a transmitter as alleged by the Examiner. The components in FIGS. 1-2 of Elder are components of a fully integrated all-CMOS AM receiver as opposed to components of a transmitter, transmitter system and/or transmission system as set forth in independent claims 164, 182, 199 and 211.

M.P.E.P. § 2145(X)(D)(1) states that "[a] prior art reference that 'teaches away' from the claimed invention is a significant factor to be considered in determining obviousness" (citing *In re Gurley*, 27 F. 3d 551, 554, 31 U.S.P.Q.2d 1130, 1132 (Fed. Cir. 1994)).

The components that the Examiner has selectively picked from the various figures of Elder are all components of a receiver, not components of a transmitter, a transmitter system and/or a transmission system as recited in independent claims 164, 182, 199 and 211. Appellants respectfully submit that the receiver of Elder teaches away from the transmitter, the transmitter system and/or the transmission system as set forth in the claim inventions recited in independent claims 164, 182, 199 and 211. Since this is a "significant factor" to be considered in determining obviousness, Appellants respectfully submit that the Board reverse the Examiner's obviousness rejection over Elder in view of Wu.

For at least the above reasons, Appellants respectfully request that the Board reverse the Examiner's obviousness rejection over Elder in view of Wu with respect to claims 164-221.

M.P.E.P. § 2145(X)(D)(2) states "[i]t is improper to combine references where the references teach away from their combination" (citing *In re Grasselli*, 713 F. 2d 731, 743, 218 U.S.P.Q. 769, 779 (Fed. Cir. 1983)).

The Examiner has attempted to combine the teachings of Elder with the teachings of Wu. The combination was based on the Examiner's interpretation that Elder taught a transmitter, not a receiver. However, in view of the arguments made of record during the prosecution of the present application and the arguments made above, it is clear that Elder teaches a receiver and not a transmitter. Thus, since the receiver receiving AM signals in Elder teaches away from the

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transmitter transmitting FM signals in Wu and vice versa, Appellants respectfully submit that Elder and Wu were improperly combined.

For at least the above reasons, Appellants respectfully request that the Board reverse the Examiner's obviousness rejection over Elder in view of Wu with respect to claims 164-221.

Under the heading "The Proposed Modification Cannot Render the Prior Art Unsatisfactory for Its Intended Purpose", M.P.E.P. § 2143.01 states that "[i]f the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification" (citing *In re Gordon*, 733 F. 2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984)).

There can be no argument that the intended purpose of Elder is to provide a fully integrated all-CMOS AM receiver. There can be no argument that the components cited by the Examiner in FIGS. 1 and 2 of Elder are components of a fully integrated all-CMOS AM receiver. Regardless of what Wu allegedly teaches, Wu cannot modify Elder to make it a transmitter, a transmitter system and/or a transmission system as set forth in independent claims 164, 182, 199 and 211 because Elder would not longer be a receiver (e.g., a fully integrated all-CMOS AM receiver), which is its intended purpose. Appellants respectfully submit that Elder cannot be modified to provide a transmitter, a transmitter system and/or a transmission system since such a modification would be a radical departure from its intended purpose as a receiver such as a fully integrated all-CMOS receiver. In other words, the Examiner is attempting to make the receiver of Elder, whose intended purpose is to receive, into a transmitter, whose intended purpose is allegedly to transmit. Modifying Elder as suggested by the Examiner (i.e., modifying Elder's receiver into a transmitter) would render Elder unsatisfactory for its intended purpose (i.e., originally as a receiver).

For at least the above reasons, Appellants respectfully request that the Board reverse the Examiner's obviousness rejection over Elder in view of Wu with respect to claims 164-221.

Under the heading "The Proposed Modification Cannot Change the Principle of Operation of a Reference", M.P.E.P. § 2143.01 states that "[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the reference are not sufficient to render the claims *prima facie* obvious."

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Regardless of what Wu allegedly teaches, Wu cannot modify Elder to make Elder into a transmitter, a transmitter system and/or a transmission system as set forth in independent claims 164-181 because the principle operation of a transmitter, a transmitter system and/or a transmission system that transmits would present a radical change or an extreme departure from the principle operation of Elder as a receiver that receives such as a fully integrated all-CMOS receiver.

In addition, Appellants respectfully note that another aspect of the principle of operation of Elder is that of an AM receiver. Elder uses the principle of amplitude modulation (AM) in its operation as a receiver. On the other hand, Wu teaches a different principle of operation (which also further supports previous arguments that Elder and Wu teach away from each other). Wu uses the principle of frequency modulation (FM) in its operation as a transmitter. To modify Elder to use frequency modulation (FM) instead of amplitude modulation (AM) and to modify Elder to operate as a transmitter, a transmitter system and/or a transmission system instead of a receiver represent an overwhelming change in the principle of operation of Elder. Accordingly, the proposed modification of Elder in view of Wu is prohibited and the obviousness rejection cannot be maintained.

For at least the above reasons, Appellants respectfully request that the Board reverse the Examiner's obviousness rejection over Elder in view of Wu with respect to claims 164-221.

Appellants respectfully submit that any one of the above arguments carries substantial weight in reversing the obviousness rejection over Elder in view of Wu. However, the combined arguments carry even more weight in reversing the obviousness rejection over Elder in view of Wu.

For at least the above reasons, Appellants respectfully request that the Board reverse the Examiner's obviousness rejection over Elder in view of Wu with respect to claims 164-221.

To maintain an obviousness rejection, each and every element as set forth in independent claims 164, 182, 199 and 211 must be taught or suggested by Elder in view of Wu. Appellants respectfully submit that each and every element as set forth in claim 164 is not taught or suggested by Elder in view of Wu.

In each case, with respect to the independent claims, the Examiner did not recite components of a transmitter, a transmitter system and/or a transmission system as set forth in

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independent claims 164, 182, 199 and 211. Instead, the Examiner cited components in Elder which were components of a receiver (i.e., a fully integrated all-CMOS AM receiver). Such teaching deficiencies were not overcome by the teachings of Wu. Thus, the Examiner failed to even present a *prima facie* case of obviousness.

In the Final Office Action and the Advisory Action, the Examiner relies on citations in Elder such as:

The receiver uses a novel architecture that allows the receiver to demodulate signals over a wide RF band, which eliminates the need for manual tuning. This is referred to as a swept I.O mode. This also significantly relaxes the frequency accuracy and stability requirements of the Transmitter, allowing the receiver to be compatible with both SAW-based and LC-based transmitters.

Elder at col. 1, lines 37-43. Appellants respectfully draw the attention of the Board to the fact that, although the cited text does mention "SAW-based and LC-based transmitters", the cited text is describing "the receiver [that] uses a novel architecture that allows the receiver to demodulate signals over a wide RF band". Elder at col. 1, lines 37-38. The cited text does not further elaborate on the components of the transmitters. Thus, Elder at col. 1, lines 37-43 only mentions SAW-based and LC-based transmitters. Despite such limited description, the Examiner has cited components in the figures which are components of a fully integrated all-CMOS AM receiver, not a transmitter, a transmitter system and/or a transmission system as set forth in independent claims 164, 182, 199 and 211.

In the Final Office Action and the Advisory Action, the Examiner relies on citations in Elder such as:

The Local Oscillator 9 (LO) can be operated in either fixed mode or swept mode, selectable via a DC control line SWEN. Fixed mode operation is preferred for precision or high-performance applications.

In Swept mode, the LO frequency is varied across a range of frequencies at a rate sufficiently higher than the data rate to allow for peak (envelope) detection. This mitigates the requirement for an accurately controlled and/or age and temperature stabilized transmitter carrier frequency.

Elder at col. 3, lines 27-35. Appellants respectfully draw the attention of the Board to the fact that, although the cited text does mention that allegedly novel aspects of the receiver "[mitigate]

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the requirement for an accurately controlled and/or age and temperature stabilized transmitter carrier frequency", the cited text relates to the receiver and, in particular, the receiver component 9 which is a local oscillator found on FIG. 1 of Elder, FIG. 1 being entitled "Fully Integrated CMOS AM Receiver". Elder at col. 3, lines 33-35. The cited text does not describe the transmitter at all, instead, the cited text describes a transmitter carrier frequency. The cited text is silent as to the components or configuration of a transmitter, a transmission system and/or a transmitter system as set forth in independent claims 164, 182, 199 and 211. Despite such limited description, the Examiner has cited components in the figures of Elder which are components of a fully integrated all-CMOS AM receiver, not a transmitter, a transmitter system and/or a transmission system as set forth in independent claims 164, 182, 199 and 211.

Appellants respectfully submit that the Examiner has not even presented a *prima facie* case of obviousness. See, e.g., *Graham v. John Deere*, 383 U.S. 1, 148 U.S.P.Q. 459 (1966). M.P.E.P. § 2142 states that "[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness" (citations from the M.P.E.P. omitted). The components recited by the Examiner are parts of a receiver described in Elder and are not parts of a transmitter, a transmitter system and/or a transmission system as set forth in independent claims 164, 182, 199 and 211. In addition, since the teaching deficiencies of Elder are not entirely made up by the teachings of Wu, the obviousness rejection with respect to independent claims 164, 182, 199 and 211 cannot be maintained.

For at least the above reasons, it is therefore respectfully requested that the obviousness rejection be reversed by the Board with respect to claim 164-221.